

CALIFORNIA REGIONAL WATER QUALITY CONTROL BOARD
CENTRAL VALLEY REGION

ORDER NO. R5-2004-0161

WASTE DISCHARGE REQUIREMENTS
FOR
COUNTY OF MADERA
AND
MADERA DISPOSAL SYSTEMS, INC.
FOR
CONSTRUCTION AND OPERATION
FAIRMEAD MUNICIPAL SOLID WASTE LANDFILL
MADERA COUNTY

The California Regional Water Quality Control Board, Central Valley Region, (hereafter Regional Board) finds that:

1. The County of Madera owns a municipal solid waste landfill about one mile south of Fairmead, in Section 14, T10S, R16E, MDB&M, as shown in Attachment A, which is incorporated herein and made part of this Order. The waste management facility is operated by Madera Disposal Systems, Inc., a California corporation, and a subsidiary of Waste Connections, Inc. The County of Madera and Madera Disposal Systems, Inc., are hereafter jointly referred to as Discharger.
2. The 121-acre facility contains one existing unlined waste management unit (Unit 1) covering about 45 acres and one existing lined waste management unit (Unit 2) covering about 26 acres, as shown in Attachment B, which is incorporated herein and made part of this Order. The facility is comprised of Assessor's Parcel Numbers (APN) 027-192-031.
3. The Discharger proposes to construct an expansion unit (Unit 3), beginning with Cell No. 1, for the discharge of municipal solid waste to an area of about 26 acres east of existing Unit 2. The proposed expansion lies in APN 027-192-027.
4. On 24 October 1997, the Regional Board issued Order No. 97-228, in which the facility was classified as a Class III waste disposal site for the discharge of municipal solid wastes in accordance with the regulations in effect when the order was issued. This Order classifies the Unit(s) as a Class III landfill that accepts municipal solid waste in accordance with Title 27, California Code of Regulations, §20005, et seq. (Title 27).
5. The Regional Board adopted Cleanup and Abatement Order No. 96-161 on 21 June 1996, requiring the Discharger to: 1) submit a time schedule for completion of the Evaluation Monitoring Program; 2) complete an Evaluation Monitoring Program in accordance with Title 27 CCR Section 20425(a) and (b) and submit a report with the results of the special distribution of each Constituent of Concern released; 3) submit an Engineering

Feasibility Study for corrective action pursuant to Title 27 CCR Section 20425(c); 4) submit for Regional Board staff review and approval a time schedule to establish, implement, conduct, and complete a Corrective Action Program in accordance with Title 27 CCR Section 20430(a); and 5) implement the Corrective Action Program in accordance with Title 27 CCR Section 20430(c).

6. The Discharger's Evaluation Monitoring Program was deemed complete by Regional Board staff on 6 November 2001. The Discharger is currently conducting a one-year test utilizing a vacuum extraction system in order to determine its effectiveness in remediating volatile organic compounds from groundwater beneath and adjacent to the Fairmead Landfill. A one-year status report of the effectiveness of the proposed vacuum extraction system is due from the Discharger by 31 December 2004. If the one-year status report determines that the vacuum extraction system is ineffective, the Discharger proposes to implement a High-Vacuum Dual Phase Extraction System or another remediation method for the removal or in-place treatment of volatile organic compounds in groundwater.

SITE DESCRIPTION

7. The waste management facility is constructed within alluvium deposited by the Chowchilla River System. The Quaternary age alluvium (Riverbank Formation) is typically vertically and horizontally anisotropic and consists of interbedded thin beds and lenses of gravel, sand, silty-sand, clayey-sand, silt, sandy-silt, clay, and sandy-clay. Beds and lenses of coarser-grained materials, channel and point bar deposits, are located about 200 to 300 feet bgs, and are localized and not continuous to the point of forming a single recognizable aquifer. Underlying the unconsolidated alluvium are Quaternary and Tertiary continental deposits of interbedded siltstone, sandstone, and claystone which comprise the principal bedrock within the region. The Quaternary and Tertiary deposits are about 400 feet bgs.
8. The measured hydraulic conductivity of the native soils underlying the Units ranges between 1×10^{-2} and 8×10^{-8} cm/sec.
9. The waste management facility is not within a fault hazard zone. The closest Holocene faults, the Foothills Fault System, are approximately 35 to 40 miles to the northeast. The maximum probable earthquake for the Foothills Fault System is estimated to be 6.5 on the Richter scale (Woodward-Clyde Consultants, 1978). The peak horizontal ground acceleration for the maximum probable earthquake for the site is 0.2 g.
10. Land uses within 1,000 feet of the facility are agricultural and residential.

11. The facility receives an average of 11.2 inches of precipitation per year (Madera Station). The mean pan evaporation is 74 inches per year (Fresno Airport Station).
12. The 100-year, 24-hour precipitation event is estimated to be 2.61 inches (Caltrans District 6 rainfall intensity-duration data for the Fresno area).
13. The waste management facility is within a 100-year flood plain (within Zone A of the 1987, Flood Hazard Boundary Map, published by the U.S. Department of Housing and Urban Development).
14. There are approximately 84 domestic or agricultural groundwater supply wells within one mile of the site. No surface springs or other sources of groundwater supply have been observed within one mile of the landfill. Five domestic wells exist within 1,000 feet of the existing Units and the proposed expansion Unit and include wells: R-1-21888 (along Road 19 ½); R-2-21784 (along Road 19 ½); R-3-21760 (along Road 19 ½); R-4 (southwest corner of Road 19 ½ and Avenue 22); and R-5-21555 (along Road 19 ½).

WASTE CLASSIFICATION

15. The Discharger disposes of municipal solid wastes and nonhazardous solid wastes, which are defined in Title 27 CCR Section 20164. Nonhazardous solid wastes includes municipal solid wastes, as referred to in the Code of Federal Regulations, Title 40, Part 258.2.

SURFACE AND GROUND WATER CONDITIONS

16. The *Water Quality Control Plan for the Sacramento River Basin and the San Joaquin River Basin, Fourth Edition* (hereafter Basin Plan), designates beneficial uses, establishes water quality objectives, and contains implementation plans and policies for all waters of the Basin.
17. Surface drainage is southwesterly toward Berenda Slough (a tributary of the Fresno River) in the Madera Hydrologic Area (545.20) of the San Joaquin Basin.
18. The landfill is on the floor of the southern San Joaquin Valley. The designated beneficial uses of Fresno River and its tributary the Berenda Slough, as specified in the Basin Plan, are municipal and domestic supply, agricultural supply, water contact and non-contact water recreation, warm fresh water habitat, wildlife habitat.
19. Groundwater monitoring data collected through the First Quarter 2004, indicates that groundwater exists in three zones: a perched groundwater zone approximately 104-107 feet bgs (elevation 139-137 feet MSL); a shallow groundwater zone approximately 116-134 feet bgs (elevation 123-117 feet MSL); and a regional groundwater zone

approximately 174-189 feet bgs (elevation 64-58 feet MSL). Depending on location, the perched groundwater zone, shallow groundwater zone, or regional groundwater zone may represent the first encountered groundwater. The perched, shallow, and regional groundwater zones are unconfined. The regional groundwater zone is in direct hydraulic communication with the shallow groundwater zone. As a result, the groundwater elevations in the shallow groundwater zone decline as the zone is slowly dewatered due to water withdrawals from the regional groundwater zone. Due to heavy pumping in the summer months, the depth to groundwater in the regional groundwater zone may fluctuate seasonally as much as 20 feet. However, due to the fine-grained nature of the geologic materials in the shallow groundwater zone, seasonal fluctuations in that groundwater zone are considerably lower than that of the regional groundwater zone.

20. Monitoring data indicates shallow and regional background groundwater quality have a specific electrical conductivity (EC) ranging from 167 to 791 micromhos/cm, and with total dissolved solids (TDS) ranging from approximately 130 to 560 mg/l. Monitoring data indicate that perched groundwater quality has an EC ranging up to 1,508 micromhos/cm, and TDS ranging up to 530 mg/l.
21. The flow direction of perched groundwater has not been defined since there are only two monitoring wells currently screened in this groundwater zone and these two wells are on opposite corners of the facility; one northeast of Unit 1, and one southwest of Unit 2. The perched groundwater zones appear to be very localized with the northeast zone extending approximately 100 feet to the north of monitoring well TW-4N-115. The limits of the southwest perched groundwater zone have not been defined, but this groundwater zone is under the influence of surface water infiltration from the irrigation canal along the southern boundary of the facility. The shallow groundwater zone appears to be controlled by clay lenses and is laterally discontinuous. The predominant direction of shallow groundwater flow appears to be vertically downward toward the regional groundwater zone. The direction of groundwater flow in the regional groundwater zone is generally toward the northeast and is influenced by the heavy pumping of nearby irrigation wells. The average groundwater gradient for the regional groundwater zone is approximately 0.016 feet per foot. The average groundwater velocities for the perched, shallow, and regional groundwater zones are not available.
22. The designated beneficial uses of the groundwater, as specified in the Basin Plan, are domestic and municipal, agricultural, and industrial supply.

GROUNDWATER MONITORING

23. The existing groundwater detection monitoring system consists of perched, shallow, and regional groundwater monitoring wells (see Attachment B, which is incorporated herein and made part of this Order). Perched and shallow groundwater monitoring wells

monitor the uppermost groundwater zones along the northern, southern, and western boundaries of Units 1 and 2. Regional groundwater monitoring wells monitor the uppermost and continuous groundwater zone on the northern and eastern margins of Unit 1 the northern margin of Unit 2, and in the future, the northwestern corner of expansion Unit 3. The monitoring wells used to collect background monitoring data for Units 1 and 2, and later for proposed expansion Unit 3, include: wells TW-1-145, TW-2E-150, TW-2N-135, TW-2S-150, and TW-5-150 for the shallow groundwater zone; and wells TW-2ED-215, TW-2ND-260, TW-3-250, and TW-4WD-290 for the regional groundwater zone. The aforementioned background monitoring wells have been utilized as part of the existing detection monitoring program since 1997. Since proposed expansion Unit 3 is contiguous and hydraulically downgradient of Unit 2, the background monitoring wells used to monitor background groundwater quality for Unit 2 are adequate to monitor background groundwater quality for expansion Unit 3. The Discharger submitted a plan on 19 April 2004, for the installation of detection monitoring wells for Unit 3. The additional detection monitoring wells will also be hydraulically downgradient of Unit 2. The 19 April 2004 detection monitoring well installation plan proposes the installation of two shallow and one regional groundwater monitoring wells along the western boundary of Unit 3, and one shallow groundwater monitoring well along the south-central boundary of Unit 3. The proposed detection monitoring wells will monitor the first encountered groundwater zone along the Point of Compliance at Unit 3.

The vadose zone (unsaturated zone) around Unit 1 is monitored by 12 landfill gas probes screened between the 10 to 50-foot depth intervals. The vadose zone beneath Unit 2 is monitored by one pan lysimeter beneath the leachate collection sump in Cell 4. The Discharger proposes to monitor the vadose zone beneath Unit 3 with a single pan lysimeter to be constructed beneath the leachate collection sump in Cell 2.

24. The Discharger's existing detection monitoring program for groundwater for Units 1 and 2 was deemed adequate on 25 July 1997, and satisfies the requirements contained in Title 27.
25. Volatile organic compounds (VOCs) are often detected in a release from a landfill, and are the primary waste constituents detected in groundwater beneath a municipal solid waste landfill (see Finding No. 30). Since volatile organic compounds are not naturally occurring and thus have no background value, they are not amenable to the statistical analysis procedures contained in Title 27 for the determination of a release of wastes from a Unit.
26. Title 27 CCR Sections 20415(e)(8) and (9) provide for the non-statistical evaluation of monitoring data that will provide the best assurance of the earliest possible detection of a release from a Unit in accordance with Title 27 CCR Section 20415(b)(1)(B)2.-4.

However, Title 27 does not specify a specific method for non-statistical evaluation of monitoring data.

27. The Regional Board may specify a non-statistical data analysis method pursuant to Title 27 CCR Section 20080(a)(1). Section 13360(a)(1) of the California Water Code allows the Regional Board to specify requirements to protect underground or surface waters from leakage from a solid waste site, which includes a method to provide the best assurance of determining the earliest possible detection of a release.
28. In order to provide the best assurance of the earliest possible detection of a release of non-naturally occurring waste constituents from a Unit, this Order specifies a non-statistical method for the evaluation of monitoring data.
29. The specified non-statistical method for evaluation of monitoring data provides two criteria (or triggers) for making the determination that there has been a release of non-naturally occurring waste constituents from a Unit. The presence of two non-naturally occurring waste constituents above their respective method detection limit (MDL), or one non-naturally occurring waste constituent detected above its practical quantitation limit (PQL), indicates that a release of waste from a Unit has occurred. Following an indication of a release, verification testing will be conducted to determine whether there has been a release from the Unit, or there is a source of the detected constituents other than the landfill, or the detection was a false detection. Although the detection of one non-naturally occurring waste constituent above its MDL is sufficient to provide for the earliest possible detection of a release, the detection of two non-naturally occurring waste constituents above the MDL as a trigger is appropriate due to the higher risk of false-positive analytical results and the corresponding increase in sampling and analytical expenses from the use of one non-naturally occurring waste constituent above its MDL as a trigger.

GROUNDWATER DEGRADATION

30. The nature of the release from Unit 1 in perched groundwater consists of the volatile organic compounds tetrachloroethene (PCE), dichlorodifluoromethane (CFC-12), and trichlorofluoromethane (CFC-11), and to a lesser extent, tetrachloroethene (TCE), cis-1,2-dichloroethene (cis-1,2-DCE), trans-1,2-dichloroethane (trans-1,2-DCE) and 1,1-dichloroethane (1,1-DCA). The nature of the release from Unit 1 in shallow groundwater consists of the volatile organic compounds PCE, CFC-12, and CFC-11, and to a lesser extent, chloroethane, TCE, and 1,1-DCE. The nature of the release from Unit 1 in regional groundwater consists of the volatile organic compounds CFC-12 and PCE. Statistical analysis of groundwater samples from the Fourth Quarter, 2003, determined that bicarbonate, TDS, calcium, magnesium, sodium, and potassium exceeded their

respective background concentrations in shallow groundwater and represent a release of inorganic waste constituents from Unit 1.

31. Evaluation monitoring by the Discharger has determined that the nature of the release from Unit 1 to the perched, shallow, and regional groundwater zones consists of volatile organic compounds (see Finding No. 30). Evaluation monitoring has also delineated the western, eastern, northern, and southern lateral extents of the volatile organic compound plume in the perched and shallow groundwater zones. The volatile organic compound impacts to the regional groundwater zone appear to be limited to relatively small areas including the northwest and southeast corners of Unit 1, and possibly around monitoring well TW-2ED-215 along the south-central boundary of Unit 1. Evaluation monitoring has determined that the vertical extent of the volatile organic compound impact is the regional groundwater zone.

NEW CONSTRUCTION AND ENGINEERED ALTERNATIVE LINER SYSTEM

32. On 17 June 1993, the State Water Resources Control Board adopted Resolution No. 93-62 implementing a State Policy for the construction, monitoring, and operation of municipal solid waste landfills that is consistent with the federal municipal solid waste regulations promulgated under Title 40, Code of Federal Regulations, Part 258 (Subtitle D).
33. Resolution No. 93-62 requires the construction of a specified composite liner system at new municipal solid waste landfills, or expansion areas of existing municipal solid waste landfills, that receive wastes after 9 October 1993.
34. Resolution No. 93-62 also allows the Regional Board to consider the approval of engineered alternatives to the prescriptive standard. Section III.A.b. of Resolution No. 93-62 requires that the engineered alternative liner systems be of a composite design similar to the prescriptive standard.
35. Title 27 CCR Section 20080(b) allows the Regional Board to consider the approval of an engineered alternative to the prescriptive standard. In order to approve an engineered alternative in accordance with Title 27 Section 20080(c)(1) and (2), the Discharger must demonstrate that the prescriptive design is unreasonably and unnecessarily burdensome and will cost substantially more than an alternative which will meet the criteria contained in Title 27 CCR Section 20080(b), or would be impractical and would not promote attainment of applicable performance standards. The Discharger must also demonstrate that the proposed engineered alternative liner system is consistent with the performance goal addressed by the particular prescriptive standard, and provides protection against water quality impairment equivalent to the prescriptive standard in accordance with Title 27 CCR Section 20080(b)(2).

36. Section 13360(a)(1) of the California Water Code allows the Regional Board to specify the design, type of construction, and/or particular manner in which compliance must be met in waste discharge requirements or orders for the discharge of waste at solid waste disposal facilities.
37. The Discharger proposes an engineered alternative liner system (see Finding No. 39) which will be designed, constructed, and operated to prevent migration of wastes from the Unit to adjacent natural geologic materials, groundwater, or surface water during disposal operations, closure, and the postclosure maintenance period in accordance with the criteria set forth in Title 27 for a Class III landfill, and the provisions in State Water Resources Control Board Resolution No. 93-62 for municipal solid wastes.
38. The Discharger submitted a 29 October 2003 report entitled: *Demonstration Project Report, Proposed Liner System, Fairmead Landfill Unit 3A, Cell 3, Madera County*, requesting approval of an engineered alternative to liner requirements.
39. The Discharger proposes to construct an engineered alternative liner system in Unit 3. The proposed liner system (in ascending order) consists of: 1) a six-inch subgrade recompacted to at least 90% of maximum dry density; 2) a 40-mil thick high-density polyethylene (HDPE) geomembrane; 3) a geosynthetic clay liner with a 60-mil thick HDPE geomembrane backing, with the geomembrane backing facing up; 4) a geocomposite drainage layer (not included on side slopes) consisting of a geonet drainage net bonded to a nonwoven geotextile; and 5) a 24-inch operations layer.
40. Side slope liner systems are proposed to be constructed of the same materials and in the same sequence and manner as the bottom liner system, with the exception of the recompacted subgrade and the geocomposite drainage layer. The side slope liner systems will be prepared in an appropriate manner using accepted engineering and construction methods so as to provide a surface that is smooth and free from rocks, sticks, and other debris that could damage or otherwise limit the performance of the geosynthetic clay layer and/or geomembrane, and certified in accordance with this Order and the approved Construction Quality Assurance Plan.
41. The Discharger adequately demonstrated that construction of a Subtitle D prescriptive standard liner system would be unreasonable and unnecessarily burdensome when compared to the proposed engineered alternative design. There is no clay source on-site or nearby and the cost of importing clay from off-site or mixing on-site soils with bentonite would cost substantially more than the alternative design.
42. The proposed leachate collection and removal system will consist of a geocomposite drainage layer consisting of a geonet drainage net bonded to a nonwoven geotextile that will be installed directly above the geosynthetic clay liner in the base liner system. The

header and lateral pipes, constructed of HDPE, will be installed within the leachate collection and removal system and will drain leachate to a four-foot deep, double-composite lined leachate collection sump filled with drain rock to be constructed tentatively at the southern end of Cell 2, Unit 3. The leachate collection sump will contain cleanout pipes and a riser pipe. The Discharger proposes to grade the subgrade soil layer so it will slope toward the leachate collection sump. The subgrade base slopes are proposed to be constructed at a minimum of 0.5 percent and the side slopes are proposed to be constructed from 3:1 to 4:1 (H:V). The design leachate flow volume by the Unit or portion of the Unit is 1,500 gallons per day.

43. A pan lysimeter will be installed two and one-half feet beneath the leachate collection sump and extend up the leachate collection trenches as far as the 30 cm depth of standing leachate could occur, for the purposes of vadose zone monitoring. The pan lysimeter will consist of a 60-mil HDPE textured geomembrane liner on a prepared subgrade that is sloped on four sides. An eight-inch diameter collection pipe will be installed within the pan lysimeter and will connect to a riser pipe that extends to the surface of the Unit. Select backfill material is proposed to be placed within and on top of the pan lysimeter.

LINER PERFORMANCE DEMONSTRATION

44. On 15 September 2000, the Regional Board adopted Resolution No. 5-00-213, Request For The State Water Resources Control Board To Review The Adequacy Of The Prescriptive Design Requirements For Landfill Waste Containment Systems To Meet The Performance Standards Of Title 27. The State Board responded, in part, that “a single composite liner system continues to be an adequate minimum standard”; however, the Regional Board “should require a more stringent design in a case where it determines that the minimum design will not provide adequate protection to a given body of groundwater.”
45. In a letter dated 17 April 2001, the Executive Officer notified Owners and Operators of Solid Waste Landfills that “the Regional Board will require a demonstration that any proposed landfill liner system to be constructed after 1 January 2002 will comply with Title 27 performance standards. A thorough evaluation of site-specific factors and cost/benefit analysis of single, double, and triple composite liner systems will likely be necessary.”
46. In accordance with the Executive Officer’s letter of 17 April 2001, the Discharger submitted a landfill liner system design performance report to demonstrate that the proposed liner system design would meet the performance standard contained in Title 27 CCR Section 20310(c) for a Class III landfill. The demonstration utilized a model to predict the performance of the proposed liner system design and the fate and transport of a release from expansion Unit 3.

47. The following concern that the barrier portion of the engineered alternative liner system design (geomembranes and GCL) is less than 0.5 inches thick, making it vulnerable to damage during the placement of the wastes, was also considered.
48. To minimize the vulnerability of damage to the engineered alternative liner system during the placement of wastes, the Discharger's methods of waste placement were modified (see Discharge Specification B.7). The Discharger is also required to inspect the operations layer for possible damage to the underlying liner system as wastes are placed upon it, and repair the damaged liner system with seven days of the observed damage (see Discharge Specification B.8).
49. To ensure proper installation of the engineered alternative liner system, the Discharger was informed in a 6 April 2004 Regional Board staff letter, that it needs to submit, for Regional Board staff approval, a work plan for an electronic leak detection survey (or a supplementary method of detecting and repairing defects where use of survey equipment is impracticable) that will provide assurance that the survey will provide 100 percent coverage of the constructed base liner system prior to its construction.
50. Based on the results of modeling that the engineered alternative liner system design would contain the wastes discharged to the Unit, and the design and construction features of the engineered alternative liner system, the Regional Board finds that the Discharger has demonstrated that the proposed engineered alternative liner system for Unit 3 meets the performance standard contained in Title 27 and affords equivalent protection against water quality impairment.

CEQA AND OTHER CONSIDERATIONS

51. The action to revise the waste discharge requirements for the existing Units at the facility is exempt from the provisions of the California Environmental Quality Act (CEQA), Public Code Section 21000, et seq., and the CEQA guidelines, in accordance with Title 14 CCR Section 15301, et seq.
52. The final environmental impact report for expansion Unit 3 was approved by the Madera County Board of Supervisors on 6 July 2004. The County of Madera filed a Notice of Determination on 12 August 2004 in accordance with the California Environmental Quality Act (Public Resources Code Section 21000 et seq.) and CEQA guidelines (14 CCR Section 15000 et seq.). The Regional Board considered the environmental impact report and incorporated mitigation measures from the environmental impact report into these waste discharge requirements designed to prevent potentially significant impacts to design facilities and to water quality.

53. Proposed expansion Unit 3 is within a 100-year flood plain (See Finding No. 13). To mitigate the potential for flood water to contact refuse, the Discharger proposes to extend existing flood protection channels and berms around Avenue 22 and Road 19 ½ .
54. A significant impact to groundwater may occur due to the generation of leachate within the refuse. To mitigate the potential for groundwater degradation by leachate, the Discharger is required to construct expansion Unit 3 with an engineered alternative composite liner system and a primary leachate collection and removal system (see Construction Specification D.3.). The Discharger has demonstrated that the proposed engineered alternative liner system is consistent with the performance goals of the prescriptive standard and affords equivalent protection against water quality impairment. Also to minimize the generation of leachate within the refuse, the Discharger is required to design all drainage control facilities to prevent the inundation of the new Unit by a 100-year, 24-hour storm event or lesser storm event and cover the refuse daily with six inches of daily cover soils and/or alternative daily cover materials (see Facility Specifications C.2., C.3., C.7., C.8., and C.15.). The Discharger is also required to install detection groundwater monitoring wells at the Point of Compliance (see Detection Monitoring Specification E.2. and Monitoring and Reporting Programs Sections C and D), pan lysimeters beneath the leachate collection and removal system sump(s) of expansion Unit 3 (see Construction Specification D.2.c., Detection Monitoring Specification E.2., and Monitoring and Reporting Section D), and landfill gas wells throughout the expansion Unit (see Facility Specification C.11, Detection Monitoring Specification E.2. and Monitoring and Reporting Program Section D) to monitor for leachate and landfill gas releases from expansion Unit 3.
55. This order implements:
- a. *The Water Quality Control Plan for the Sacramento River and San Joaquin River Basins, Fourth Edition;*
 - b. The prescriptive standards and performance goals of Title 27 CCR Subdivision 1 Division 2 Chapters 1 through 7, effective 18 July 1997, and subsequent revisions;
 - c. The prescriptive standards and performance criteria of RCRA Subtitle D, Part 258; and
 - d. State Water Resources Control Board Resolution No. 93-62, *Policy for Regulation of Discharges of Municipal Solid Waste*, adopted 17 June 1993.
56. Section 13267(b) of the California Water Code provides that: “In conducting an investigation specified in subdivision (a), the regional board may require that any person who has discharged, or is suspected of discharging, or who proposed to discharge within

its region, or any domiciliary, or political agency or entity of this state who had discharged, discharges, or is suspected of discharging, or who proposed to discharge waste outside of its region that could affect the quality of the waters of the state within its region shall furnish, under penalty of perjury, technical or monitoring program reports which the regional board requires. The burden, including costs of these reports, shall bear a reasonable relationship to the need of the reports and the benefits to be obtained from the reports.” The monitoring and reporting program required by this Order and the attached “Monitoring and Reporting Program No. R5-2004-0161” are necessary to assure compliance with these waste discharge requirements. The Discharger operates the facility that discharges the waste subject to this Order.

PROCEDURAL REQUIREMENTS

57. All local agencies with jurisdiction to regulate land use, solid waste disposal, air pollution, and to protect public health have approved the use of this site for the discharges of waste to land stated herein.
58. The Regional Board notified the Discharger and interested agencies and persons of its intent to prescribe waste discharge requirements for this discharge, and has provided them with an opportunity for a public hearing and an opportunity to submit their written views and recommendations.
59. The Regional Board, in a public meeting, heard and considered all comments pertaining to the discharge.
60. Any person affected by this action of the Regional Board may petition the State Water Resources Control Board to review the action in accordance with Sections 2050 through 2068, Title 23, California Code of Regulations. The petition must be received by the State Water Resources Control Board, Office of Chief Counsel, P.O. Box 100, Sacramento, California 95812, within 30 days of the date of issuance of this Order. Copies of the laws and regulations applicable to the filing of a petition are available on the Internet at http://www.swrcb.ca.gov/water_laws/index.html and will be provided on request.

IT IS HEREBY ORDERED, pursuant to Sections 13263 and 13267 of the California Water Code, that Order No. 97-228 is rescinded, and that County of Madera and Madera Disposal Systems, Inc., their agents, successors, and assigns, in order to meet the provisions of Division 7 of the California Water Code and the regulations adopted thereunder, shall comply with the following:

A. PROHIBITIONS

1. The discharge of ‘hazardous waste’ or ‘designated waste’ is prohibited. For the purposes of this Order, the term ‘hazardous waste’ is as defined in Title 23, California Code of Regulations, Section 2510 et seq., and ‘designated waste’ is as defined in Title 27.
2. The discharge of wastes outside of a Unit or portions of a Unit specifically designed for their containment is prohibited.
3. The discharge of waste to a closed Unit is prohibited.
4. The discharge shall not cause the release of pollutants or waste constituents in a manner which could cause a condition of nuisance, degradation, contamination, or pollution of groundwater to occur, as indicated by the most appropriate statistical or nonstatistical data analysis method and retest method listed in this Order, the Monitoring and Reporting Program, or the Standard Provisions and Reporting Requirements.
5. The discharge of solid or liquid waste or leachate to surface waters, surface water drainage courses, or groundwater is prohibited.
6. The discharge shall not cause any increase in the concentration of waste constituents in soil-pore gas, soil-pore liquid, soil, or other geologic materials outside of the Unit if such waste constituents could migrate to waters of the State — in either the liquid or the gaseous phase — and cause a condition of nuisance, degradation, contamination, or pollution.
7. The discharge of wastes which have the potential to reduce or impair the integrity of containment structures or which, if commingled with other wastes in the Unit, could produce a violent reaction, heat or pressure, fire or explosion, toxic by-products, or reaction products, which in turn:
 - a. require a higher level of containment than provided by the Unit; or
 - b. are ‘restricted hazardous wastes’; or
 - c. impair the integrity of containment structures;is prohibited.

B. DISCHARGE SPECIFICATIONS

1. Nonhazardous wastes shall be discharged to either:

- a. that portion of existing Unit 2, Cell 3 or expansion Unit 3; or
 - b. to a Unit equipped with a composite liner containment system which meets the requirements for both liners and leachate collection and removal systems specified under D. Construction Specifications.
2. The discharge shall remain within the designated disposal area at all times.
 3. A minimum separation of five feet shall be maintained between the base of the wastes and the highest anticipated elevation of underlying groundwater, including the capillary fringe.
 4. Collected leachate shall be disposed of in accordance with Title 27 and in a manner consistent with its waste classification.
 5. Condensate from the landfill gas control systems shall be disposed of in a manner consistent with the chemical characteristics of the wastes.
 6. Neither the treatment nor the discharge of wastes shall cause a pollution or nuisance as defined by the California Water Code Section 13050.
 7. The waste discharged to the initial three feet of the new Unit, as measured from the top of the operations layer of the liner, shall consist only of "packer waste", excluding waste that would pose a danger of physical damage to the liner. The discharge of the first three feet of 'packer waste' to each expansion cell of the new Unit shall be continuously observed and documented by an appropriate inspector for 'spinouts' resulting from sharp turns and accelerations and decelerations that could cause localized damage to the liner.
 8. The operations layer shall be removed at locations where 'spinouts' or localized shear damage is suspected and the liner inspected for damage. If the inspection of the liner determines that it has been damaged, the Discharger shall immediately cordon off an area surrounding the damaged liner, and within **48 hours** following the time of the observed liner damage notify the Regional Board. Within seven days of the observed liner damage, the Discharger shall submit a plan to repair the damaged liner in accordance with the approved Construction Quality Assurance Plan as per Construction Specification D.2.a.

C. FACILITY SPECIFICATIONS

1. The Discharger shall, in a timely manner, remove and relocate any wastes discharged at this facility in violation of this Order.

2. Units and containment structures shall be designed and constructed to limit, to the greatest extent possible, ponding, infiltration, inundation, erosion, slope failure, washout, and overtopping as a result of a 100-year, 24-hour precipitation event.
3. Precipitation and drainage control systems shall be designed, constructed, and maintained to accommodate the anticipated volume of precipitation and peak flows from surface water runoff under the 100-year, 24-hour precipitation conditions.
4. The Discharger shall immediately notify the Regional Board of any flooding, unpermitted discharge of waste off-site, equipment failure, slope failure, or other change in site conditions which could impair the integrity of waste or leachate containment facilities or precipitation and drainage control structures.
5. Water used for facility maintenance shall be limited to the minimum amount necessary for dust control, construction, and after closure, the minimum amount necessary to irrigate cover vegetation or for uses approved by the Executive Officer.
6. Cover materials shall be graded to divert precipitation from Units, to prevent the ponding of water over wastes, and to resist erosion as a result of a 100-year, 24-hour precipitation event.
7. All drainage control systems shall be designed and constructed to prevent the ponding of water over wastes.
8. Surface drainage from tributary areas and internal site drainage from surface or subsurface sources shall not contact or percolate through wastes.
9. Units or portions of Units shall be designed, constructed, and operated in compliance with precipitation and flood control provisions and requirements contained in the Standard Provisions and Reporting Requirements referenced in Provision F.4 below.
10. The Discharger shall maintain in good working order any facility, control system, or monitoring device installed to achieve compliance with the waste discharge requirements.
11. Methane and other landfill gases shall be adequately vented, removed from the Unit, or otherwise controlled to prevent the danger of adverse health effects, nuisance conditions, or the impairment of the beneficial uses of surface water or groundwater due to migration through the unsaturated zone.
12. Surface drainage within the waste management facility shall either be contained on-site or be discharged in accordance with applicable storm water regulations.

13. The Discharger shall maintain a *Storm Water Pollution Prevention Plan and Monitoring Program and Reporting Requirements* in accordance with State Water Resources Control Board Order No. 97-03-DWQ, or retain all storm water on-site.
14. Areas with slopes greater than ten percent, surface drainage courses, and areas subject to erosion by wind or water shall be designed and constructed to prevent such erosion.
15. A minimum thickness of six inches of on-site cover soil shall be maintained over all but the active disposal area of a Unit. This area shall be properly graded and drained to prevent ponding and infiltration. The active disposal area shall be confined to the smallest practicable area based on the anticipated quantity of waste discharge and other waste management operations, and shall be covered daily with a minimum of six inches of on-site soils, or an alternative daily cover material approved by the Executive Officer.
16. Annually, prior to **1 October** and **within 7 days** following a major storm event, all precipitation and drainage control systems shall be inspected. By **31 October** of each year, or **within 30 days** of a major storm event, any necessary construction, maintenance, or repairs of precipitation and drainage control facilities shall be completed to prevent erosion or flooding of the facility and to prevent surface drainage from contacting or percolating through wastes.
17. By **15 November of each year**, or within 45 days of a major storm event, the Discharger shall submit an annual report to the Regional Board describing the results of the inspection(s) and the measures taken to maintain the precipitation and drainage control systems.

D. CONSTRUCTION SPECIFICATIONS

1. The Discharger shall submit for Executive Officer review and approval either prior to, or concurrent with, the Construction Quality Assurance Plan as per Construction Specification D.2.a., below, a Design Report for each expansion cell of the proposed Unit 3 that includes detailed plans, specifications, and descriptions for the liner components, leachate collection and removal system components, and leak detection system components. The Design Report shall incorporate design rationale, with supporting calculations, for all components of the proposed containment system, and shall describe design details that allow for annual integrity testing of the primary leachate collection and removal system to demonstrate whether the primary leachate collection and removal system was designed and is operating to function without clogging, pursuant to Title 27 CCR Section 20340(d).

2. The Discharger shall submit for Executive Officer review and approval **prior to** construction, design plans and specifications for new Units and expansions of existing Units, that include the following:
 - a. A Construction Quality Assurance Plan meeting the requirements of §20324 of Title 27; and
 - b. A geotechnical evaluation of the area soils, evaluating their use as the base layer; and
 - c. An unsaturated zone monitoring system, which is demonstrated to remain effective throughout the active life, closure, and postclosure maintenance periods of the Unit, which shall be installed beneath the composite liner system in accordance with §20415(d) of Title 27.
3. The liner systems of each new cell within Unit 3 shall be constructed in accordance with the following composite liner designs:
 - a. An engineered alternative composite bottom liner system that is comprised, in ascending order, of the following:
 - 1) A minimum six-inch thick engineered soil foundation layer that shall be constructed of select soil materials, in accordance with the approved Construction Quality Assurance Plan that meets the following criteria:
 - a) A maximum size of ½-inch, subrounded or rounded clasts;
 - b) A gradation series (e.g., well-graded) that is amenable to compaction; and
 - c) Recompact and rolled smooth to at least 90 percent of maximum dry density and within two percent of optimum moisture content.
 - 2) A 40-mil thick HDPE geomembrane;
 - 3) A GCL with a 60-mil thick HDPE geomembrane backing, with the geomembrane backing facing up. The GCL shall exhibit appropriate strength characteristics (hydrated) to accommodate stresses associated with specific landfill design parameters, with particular attention to interface, long-term creep shear, and bearing capacity.
 - 4) A geocomposite drainage layer (primary leachate collection and removal system) over the base liner system; and

- 5) A two-foot thick operations layer over the primary leachate collection and removal system of the bottom liner system
- b. An engineered alternative composite side slope liner system that is comprised, in ascending order, of the following:
 - 1) A prepared subgrade that meets the criteria contained in Construction Specification D.4, below;
 - 2) A 40-mil thick HDPE geomembrane;
 - 3) A GCL with a 60-mil thick HDPE geomembrane backing, with the geomembrane backing facing up. The GCL shall exhibit appropriate strength characteristics (hydrated) to accommodate stresses associated with specific landfill design parameters, with particular attention to interface, long-term creep shear, and bearing capacity; and
 - 4) A two-foot thick operations layer over the primary leachate collection and removal system of the bottom liner system
4. The subgrade for the bottom and the side slopes of each cell of expansion Unit 3 shall be prepared in an appropriate manner using accepted engineering and construction methods so as to provide a smooth surface that is free from rocks, sticks, or other debris that could damage or otherwise limit the performance of the 40-mil thick HDPE geomembrane.
5. After the operations layer is installed, the entire base liner system shall be tested for the presence of defects using an electronic leak detection survey method (or supplementary method for detecting and repairing defects where use of the survey equipment is impracticable). All defects to the liner system shall be repaired before waste is discharged to expansion Unit 3. The location and nature of each defect shall be noted in the construction report.
6. The Discharger may propose changes to the liner system design prior to construction, provided that approved components are not eliminated, the engineering properties of the components are not substantially reduced, and the proposed liner system results in the protection of water quality equal to or greater than the design prescribed by Title 27 and this Order. The proposed changes may be made following approval by the Executive Officer. Substantive changes to the design require reevaluation as an engineered alternative and approval by the Regional Board.
7. Construction shall proceed only after all applicable construction quality assurance plans have been approved by the Executive Officer.

8. The leachate collection and removal system shall be designed and operated so that there is no buildup of hydraulic head on the base or side slope liner systems.
9. Following the completion of construction of a Unit or portion of a Unit, and prior to discharge onto the newly constructed liner system, the final documentation required in Title 27 CCR Section 20324(d)(1)(C) shall be submitted to the Executive Officer for review and approval. The report shall be certified by a registered civil engineer or a certified engineering geologist. It shall contain sufficient information and test results to verify that construction was in accordance with the design plans and specifications, and with the prescriptive standards and performance goals of Title 27.
10. A third party independent of both the Discharger and the construction contractor shall perform all of the construction quality assurance monitoring and testing during the construction of a liner system.
11. If monitoring reveals substantial or progressive increases of leachate generation above the design leachate flow volume of 1,500 gallons per day (see Finding No. 42) by the Unit or portion of the Unit, such that the depth of fluid on any portion of the leachate collection and removal system exceeds 30 cm, the Discharger shall immediately notify Regional Board staff in writing within seven days. The notification shall include a timetable for remedial or corrective action necessary to achieve compliance with the leachate depth limitation.

E. DETECTION MONITORING SPECIFICATIONS

1. The Discharger shall submit for Executive Officer review and approval a groundwater detection monitoring program demonstrating compliance with Title 27 for expansion Unit 3.
2. The Discharger shall comply with the detection monitoring program provisions of Title 27 for groundwater, surface water, and the unsaturated zone, and in accordance with Monitoring and Reporting Program No. R5-2004-0161. A detection monitoring program for a new Unit shall be installed, operational, and one year of monitoring data collected prior to the discharge of wastes [Title 27 CCR Section 20415(e)(6)].
3. The Discharger shall provide Regional Board staff a minimum of **one week** notification prior to commencing any field activities related to the installation, repair, or abandonment of monitoring devices, and a minimum **48 hour** notification prior to the collection of samples associated with a detection monitoring program, evaluation monitoring program, or corrective action program.

4. The Discharger shall comply with the Water Quality Protection Standard as specified in this Order, Monitoring and Reporting Program No. R5-2004-0161, and the Standard Provisions and Reporting Requirements, dated April 2000.
5. The Water Quality Protection Standard for organic compounds which are not naturally occurring and not detected in background groundwater samples shall be taken as the detection limit of the analytical method used (i.e., US-EPA methods 8260 and 8270). The presence of non-naturally occurring organic compounds in samples above the Water Quality Protection Standard from detection monitoring wells is evidence of a release from the Unit.
6. The concentrations of the constituents of concern in waters passing the Point of Compliance shall not exceed the concentration limits established pursuant to Monitoring and Reporting Program No. R5-2004-0161.
7. For each monitoring event, the Discharger shall determine whether the landfill is in compliance with the Water Quality Protection Standard using procedures specified in Monitoring and Reporting Program No. R5-2004-0161 and Title 27 CCR Section 20415(e).
8. For any given monitored medium, the samples taken from all monitoring points and background monitoring points to satisfy the data analysis requirements for a given reporting period shall all be taken **within a span not to exceed 30 days**, unless the Executive Officer approves a longer time period, and shall be taken in a manner that ensures sample independence to the greatest extent feasible.
9. Specific methods of collection and analysis must be identified. Sample collection, storage, and analysis shall be performed according to the most recent version of USEPA Methods, such as the latest editions, as applicable, of: (1) *Methods for the Analysis of Organics in Water and Wastewater* (USEPA 600 Series), (2) *Test Methods for Evaluating Solid Waste* (SW-846, latest edition), and (3) *Methods for Chemical Analysis of Water and Wastes* (USEPA 600/4-79-020), and in accordance with the approved Sample Collection and Analysis Plan.
10. If methods other than USEPA-approved methods or Standard Methods are used, the exact methodology shall be submitted for review and approval by the Executive Officer prior to use.
11. The **methods of analysis and the detection limits** used must be appropriate for the expected concentrations. For the monitoring of any constituent or parameter that is found in concentrations which produce more than 90% non-numerical determinations (i.e., “trace” or “ND”) in data from background monitoring points for that medium, the

analytical method having the lowest method detection limit (MDL) shall be selected from among those methods which would provide valid results in light of any matrix effects or interferences.

12. **“Trace” results** - results falling between the MDL and the practical quantitation limit (PQL) - shall be reported as such, and shall be accompanied both by the estimated MDL and PQL values for that analytical run.
13. **MDLs and PQLs** shall be derived by the laboratory for each analytical procedure, according to State of California laboratory accreditation procedures. These MDLs and PQLs shall reflect the detection and quantitation capabilities of the specific analytical procedure and equipment used by the lab, rather than simply being quoted from USEPA analytical method manuals. In relatively interference-free water, laboratory-derived MDLs and PQLs are expected to closely agree with published USEPA MDLs and PQLs.
14. If the laboratory suspects that, due to a change in matrix or other effects, the true detection limit or quantitation limit for a particular analytical run differs significantly from the laboratory-derived MDL/PQL values, the results shall be flagged accordingly, along with estimates of the detection limit and quantitation limit actually achieved. The **MDL shall always be calculated such that it represents the lowest achievable concentration associated with a 99% reliability of a nonzero result.** The PQL shall always be calculated such that it represents the lowest constituent concentration at which a numerical value can be assigned with reasonable certainty that it represents the constituent’s actual concentration in the sample. Normally, PQLs should be set equal to the concentration of the lowest standard used to calibrate the analytical procedure.
15. All **QA/QC data** shall be reported, along with the sample results to which they apply, including the method, equipment, analytical detection and quantitation limits, the percent recovery, an explanation for any recovery that falls outside the QC limits, the results of equipment and method blanks, the results of spiked and surrogate samples, the frequency of quality control analysis, and the name and qualifications of the person(s) performing the analyses. Sample results shall be reported unadjusted for blank results or spike recoveries. In cases where contaminants are detected in QA/QC samples (i.e., field, trip, or lab blanks), the accompanying sample results shall be appropriately flagged.
16. Unknown chromatographic peaks shall be reported, along with an estimate of the concentration of the unknown analyte. When unknown peaks are encountered, second column or second method confirmation procedures shall be performed to attempt to identify and more accurately quantify the unknown analyte.
17. The statistical method shall account for data below the practical quantitation limit (PQL) with one or more statistical procedures that are protective of human health and the

environment. Any PQL validated pursuant to §20415(e)(7) of Title 27 that is used in the statistical method shall be **the lowest concentration (or value) that can be reliably achieved** within limits of precision and accuracy specified in the WDRs for routine laboratory operating conditions that are available to the facility. The Discharger's technical report, pursuant to §20415(e)(7) of Title 27, shall consider the PQLs listed in Appendix IX to Chapter 14 of Division 4.5 of Title 22, California Code of Regulations, for guidance when specifying limits of precision and accuracy. For any given constituent monitored at a background or downgradient monitoring point, an indication that falls between the MDL and the PQL for that constituent (hereinafter called a "trace" detection) shall be identified and used in appropriate statistical or nonstatistical tests. Nevertheless, for a statistical method that is compatible with the proportion of censored data (trace and ND indications) in the data set, the Discharger can use the laboratory's concentration estimates in the trace range (if available) for statistical analysis, in order to increase the statistical power by decreasing the number of "ties".

18. Background for water samples or soil-pore gas samples shall be represented by the data from all samples taken from applicable background monitoring points during that reporting period (at least one sample from each background monitoring point). The Discharger may propose an alternate statistical method [to the methods listed under Title 27 CCR Section 20415(e)(8)(A-D)] in accordance with Title 27 CCR Section 20415(e)(8)(E), for review and approval by the Executive Officer.
19. The Discharger may propose an alternate statistical method [to the methods listed under Title 27 CCR Section 20415(e)(8)(A-D)] in accordance with Title 27 CCR Section 20415(e)(8)(E), for review and approval by the Executive Officer. Upon receiving written approval from the Executive Officer, alternate statistical procedures may be used for determining the significance of analytical results for common laboratory contaminants (i.e., methylene chloride, acetone, diethylhexyl phthalate, and di-n-octyl phthalate). Nevertheless, analytical results involving detection of these analytes in any background or downgradient sample shall be reported and flagged for easy reference by Regional Board staff.
20. The Discharger shall use the following non-statistical method for all analytes (non-naturally occurring waste constituents) that are detected in fewer than 10% of the background samples. The non-statistical method shall be implemented as follows:
 - a. From the constituent of concern or monitoring parameter list, identify each analyte in the **current** sample that exceeds either its respective MDL or PQL. The Discharger shall conclude that the exceedence provides a preliminary indication of a release or a change in the nature or extent of the release, at that monitoring point, if **either**:

- 1) The data contains two or more analytes that are detected in fewer than 10% of background samples that equal or exceed their respective MDLs; or
 - 2) The data contains one or more analyte that equals or exceeds its PQL.
- b. **Discrete Retest** [Title 27 CCR Section 20415(e)(8)(E)]:
- 1) In the event that the Discharger concludes (pursuant to paragraph 20.a., above) that there is a preliminary indication of a release, then the Discharger shall immediately notify Regional Board staff by phone or e-mail and, within 30 days of such indication, shall collect two new (retest) samples from the monitoring point where the release is preliminarily indicated.
 - 2) For any given retest sample, the Discharger shall include, in the retest analysis, **only the laboratory analytical results for those analytes detected in the original sample**. As soon as the retest data are available, the Discharger shall conclude that there is measurably significant evidence of a release if two or more analytes equal or exceed their respective MDLs or if one or more analyte equals or exceeds its PQL and shall:
 - a) **Immediately** notify the Regional Board about any constituent or constituents verified to be present at the monitoring point, and follow up with written notification submitted by certified mail **within seven days** of validation; and
 - b) Comply with 20.b.3), below if any constituent or constituents were verified to be present.
 - 3) Any analyte that triggers a discrete retest per this method shall be added to the monitoring parameter list such that it is monitored during each regular monitoring event.
21. If the Discharger determines that there is measurably significant evidence of a release from the Units at any monitoring point, the Discharger shall **immediately** implement the requirements of **XI. Response To A Release, C. Release Has Been Verified**, contained in the Standard Provisions and Reporting Requirements.

F. PROVISIONS

1. The Discharger shall maintain a copy of this Order at the facility and make it available at all times to facility operating personnel, who shall be familiar with its contents, and to regulatory agency personnel.

WASTE DISCHARGE REQUIREMENTS ORDER NO. R5-2004-0161
COUNTY OF MADERA AND MADERA DISPOSAL SYSTEMS, INC.
FOR CONSTRUCTION AND OPERATION
FAIRMEAD MUNICIPAL SOLID WASTE LANDFILL
MADERA COUNTY

-24-

2. The Discharger shall comply with all applicable provisions of Title 27 and 40 Code of Federal Regulations Part 258 (Subtitle D) that are not specifically referred to in this Order.
3. The Discharger shall comply with Monitoring and Reporting Program No. R5-2004-0161, which is incorporated into and made part of this Order.
4. The Discharger shall comply with the applicable portions of the *Standard Provisions and Reporting Requirements for Waste Discharge Requirements for Nonhazardous Solid Waste Discharges Regulated by Title 27 and/or Subtitle D (27 CCR §20005 et seq. and 40 CFR 258 et seq.)*, dated April 2000, which are hereby incorporated into this Order.
5. In the event the Discharger does not comply or will be unable to comply with any prohibition or limitation of this Order for any reason, the Discharger shall notify the appropriate Regional Board office by telephone **as soon as** it or its agents have knowledge of such noncompliance or potential for noncompliance, and shall confirm this notification in writing **within two weeks**. The written notification shall state the nature, time, and cause of noncompliance, and shall describe the measures being taken to prevent recurrences and shall include a timetable for corrective actions.
6. All reports and transmittal letters shall be signed by persons identified below:
 - a. For a corporation: by a principal executive officer of at least the level of senior vice-president.
 - b. For a partnership or sole proprietorship: by a general partner or the proprietor.
 - c. For a municipality, state, federal or other public agency: by either a principal executive officer or ranking elected or appointed official.
 - d. A duly authorized representative of a person designated in a, b or c above if;
 - 1) The authorization is made in writing by a person described in a, b, or c of this provision;
 - 2) The authorization specifies either an individual or a position having responsibility for the overall operation of the regulated facility or activity, such as the position of plant manager, operator of a Unit, superintendent, or position of equivalent responsibility. (A duly authorized representative may thus be either a named individual or any individual occupying a named position); and
 - 3) The written authorization is submitted to the Regional Board.

- e. Any person signing a document under this Section shall make the following certification:

“I certify under penalty of law that I have personally examined and am familiar with the information submitted in this document and all attachments and that, based on my inquiry of those individuals immediately responsible for obtaining the information, I believe that the information is true, accurate, and complete. I am aware that there are significant penalties for submitting false information, including the possibility of fine and imprisonment.”

7. The Discharger shall take all reasonable steps to minimize any adverse impact to the waters of the State resulting from noncompliance with this Order. Such steps shall include accelerated or additional monitoring as necessary to determine the nature, extent, and impact of the noncompliance.
8. The owner of the waste management facility shall have the continuing responsibility to assure protection of waters of the state from discharged wastes and from gases and leachate generated by discharged waste during the active life, closure, and postclosure maintenance period of the Unit(s) and during subsequent use of the property for other purposes.
9. The fact that it would have been necessary to halt or reduce the permitted activity in order to maintain compliance with this Order shall not be regarded as a defense for the Discharger's violations of the Order.
10. To assume ownership or operation under this Order, the succeeding owner or operator must apply in writing to the Regional Board requesting transfer of the Order within 14 days of assuming ownership or operation of this facility. The request must contain the requesting entity's full legal name, the State of incorporation if a corporation, the name and address and telephone number of the persons responsible for contact with the Regional Board, and a statement. The statement shall comply with the signatory requirements contained in Provision F.6. and state that the new owner or operator assumes full responsibility for compliance with this Order. Failure to submit the request shall be considered a discharge without requirements, a violation of the California Water Code. Transfer of this Order shall be approved or disapproved by the Regional Board.
11. The Discharger shall establish cost estimates for initiating and completing corrective action for all known or reasonably foreseeable releases from the landfill, and submit these estimates to the Executive Officer for review and approval.
12. The Discharger shall maintain assurances of financial responsibility for initiating and completing corrective action for all known or reasonably foreseeable releases from the

landfill as specified in Title 27 CCR Section 22221, and shall submit the financial assurance mechanism to the Financial Assurances Section of the California Integrated Waste Management Board as specified in Title 27 CCR Subchapter 3 Article 1.

13. The Discharger is required to maintain financial assurance mechanisms for closure and post closure maintenance costs as specified in Title 27 CCR Sections 22205 and 22210. The Discharger is required to submit the financial assurance mechanism to the Financial Assurances Section of the California Integrated Waste Management Board, which determines if the mechanism meets the requirements of Title 27 CCR Subchapter 3 Article 1, and if the amount of coverage is adequate.
14. The Discharger shall complete the tasks contained in these waste discharge requirements in accordance with the following time schedule:

<u>Task</u>	<u>Compliance Date</u>
a. Construction Plans	
Submit a Design Report that includes detailed plans and specifications for Executive Officer review and approval. (see Construction Specification D.1. and D.2.)	Prior to construction
b. Construction Report	
Submit a construction report upon completion demonstrating construction was in accordance with approved construction plans for Executive Officer review and approval. (see Construction Specification D.9.)	Prior to discharge
c. Groundwater Detection Monitoring Program	
Submit for Executive Officer review and approval a groundwater detection monitoring program for expansion Unit 3. (see Detection Monitoring Specification E.1.)	Prior to Discharge

If, in the opinion of the Executive Officer, the Discharger fails to comply with the provisions of this Order, the Executive Officer may apply to the Attorney General for judicial enforcement or issue a complaint for Administrative Civil Liability.

WASTE DISCHARGE REQUIREMENTS ORDER NO. R5-2004-0161
COUNTY OF MADERA AND MADERA DISPOSAL SYSTEMS, INC.
FOR CONSTRUCTION AND OPERATION
FAIRMEAD MUNICIPAL SOLID WASTE LANDFILL
MADERA COUNTY

-27-

I, THOMAS R. PINKOS, Executive Officer, do hereby certify that the foregoing is a full, true, and correct copy of an Order adopted by the California Regional Water Quality Control Board, Central Valley Region, on 15 October 2004.

THOMAS R. PINKOS, Executive Officer

VSM:vsm/rac

CALIFORNIA REGIONAL WATER QUALITY CONTROL REGIONAL BOARD
CENTRAL VALLEY REGION

MONITORING AND REPORTING PROGRAM NO. R5-2004-0161
FOR
COUNTY OF MADERA
AND
MADERA DISPOSAL SYSTEMS, INC.
FOR
CONSTRUCTION AND OPERATION
FAIRMEAD MUNICIPAL SOLID WASTE LANDFILL
MADERA COUNTY

Compliance with this Monitoring and Reporting Program, with Title 27, California Code of Regulations, Section 20005, et seq. (hereafter Title 27), and with the *Standard Provisions and Reporting Requirements for Waste Discharge Requirements for Nonhazardous Solid Waste Discharges Regulated by Title 27 and/or Subtitle D (27 CCR §20005 et seq. and 40 CFR 258)*, dated April 2000, is ordered by Waste Discharge Requirements Order No. R5-2004-0161.

A. REQUIRED MONITORING REPORTS

<u>Report</u>	<u>Due</u>
1. Groundwater Monitoring (Section D.1)	See Table I
2. Annual Monitoring Summary Report (Section E.5.)	Annually
3. Unsaturated Zone Monitoring (Section D.2)	See Table II
4. Leachate Monitoring (Section D.3)	See Table III
5. Facility Monitoring (Section D.4)	As necessary
6. Response to a Release (Standard Provisions and Reporting Requirements)	As necessary

B. REPORTING

The Discharger shall report monitoring data and information as required in this Monitoring and Reporting Program and as required in Order No. R5-2004-0161 and the Standard Provisions and Reporting Requirements. Reports which do not comply with the required format will be **REJECTED** and the Discharger shall be deemed to be in noncompliance with the waste discharge requirements. In reporting the monitoring data required by this

program, the Discharger shall arrange the data in tabular form so that the date, the constituents, the concentrations, and the units are readily discernible. The data shall be summarized in such a manner so as to illustrate clearly the compliance with waste discharge requirements or the lack thereof. Data shall also be submitted in a digital format acceptable to the Executive Officer.

Each monitoring report shall include a compliance evaluation summary as specified in E. Reporting Requirements.

Field and laboratory tests shall be reported in each monitoring report. Monthly, quarterly, semiannual, and annual monitoring reports shall be submitted to the Regional Board in accordance with the following schedule for the calendar period in which samples were taken or observations made.

<u>Sampling Frequency</u>	<u>Reporting Frequency</u>	<u>Reporting Periods End</u>	<u>Report Date Due</u>
Monthly	Quarterly	Last Day of Month	by Semiannual Schedule
Quarterly	Quarterly	31 March	31 July
		30 June	31 July
		30 September	31 January
		31 December	31 January
Semiannually	Semiannually	30 June	31 July
		31 December	31 January
Annually	Annually	31 December	31 January

The Discharger shall submit an **Annual Monitoring Summary Report** to the Regional Board covering the previous monitoring year. The annual report shall contain the information specified in E. Reporting Requirements and a discussion of compliance with the waste discharge requirements and the Water Quality Protection Standard.

The results of **all monitoring** conducted at the site shall be reported to the Regional Board in accordance with the reporting schedule above for the calendar period in which samples were taken or observations made.

C. WATER QUALITY PROTECTION STANDARD AND COMPLIANCE PERIOD

1. **Water Quality Protection Standard Report**

For each waste management unit (Unit), the Water Quality Protection Standard shall consist of all constituents of concern, the concentration limit for each constituent of concern, the point of compliance, and all water quality monitoring points.

The Water Quality Protection Standard for naturally occurring waste constituents consists of the constituents of concern, the concentration limits, and the point of compliance and all monitoring points. The Executive Officer shall review and approve the Water Quality Protection Standard, or any modification thereto, for each monitored medium.

The report shall:

- a. Identify **all distinct bodies of surface and ground water** that could be affected in the event of a release from a Unit or portion of a Unit. This list shall include at least the uppermost aquifer and any permanent or ephemeral zones of perched groundwater underlying the facility.
- b. Include a map showing the monitoring points and background monitoring points for the surface water monitoring program, groundwater monitoring program, and the unsaturated zone monitoring program. The map shall include the point of compliance in accordance with Title 27 CCR Section 20405.
- c. Evaluate the perennial direction(s) of groundwater movement within the uppermost groundwater zone(s).

If subsequent sampling of the background monitoring point(s) indicates significant water quality changes due to either seasonal fluctuations or other reasons unrelated to waste management activities at the site, the Discharger may request modification of the Water Quality Protection Standard.

2. **Constituents of Concern**

The constituents of concern include all the waste constituents, their reaction products, and hazardous constituents that are reasonably expected to be in or derived from waste contained in the Unit. The constituents of concern for all Units at the facility are those listed in Tables I through III for the specified monitored medium, and Table V. The Discharger shall monitor all constituents of concern every five years, or more frequently as required in accordance with a Corrective Action Program.

a. **Monitoring Parameters**

Monitoring parameters are constituents of concern that are the waste

constituents, reaction products, hazardous constituents, and physical parameters that provide a reliable indication of a release from a Unit. The monitoring parameters for all Units are those listed in Tables I through III for the specified monitored medium and Table IV.

3. Concentration Limits

The concentration limits for each constituent of concern are as follows:

- a. For anthropogenic (not naturally occurring) constituents, which have no natural, and therefore, no background values, the concentration limit (water quality protection standard) shall be the detection limit of the analytical method(s) used.
- b. For naturally occurring constituents of concern (inorganic constituents of concern), the concentration limit shall be the calculated statistical concentration limit, except, when there is insufficient monitoring data to calculate statistical concentration limits. For all inorganic constituents of concern that have been consistently non-detected, the interim concentration limit shall be equal to the method reporting limit until sufficient monitoring data has been collected to calculate the statistical concentration limit. All inorganic constituents of concern, for which historic monitoring data exists, shall have an interim concentration limit equal to the highest concentration to date until sufficient monitoring data has been collected to calculate the statistical concentration limit.

Pursuant to Title 27 CCR Section 20415(e)(10)(B), for each naturally occurring inorganic constituent of concern, analyses of statistically significant increases will be completed semiannually based on interwell comparisons. A comparison will be made between the calculated concentration limits for each naturally occurring inorganic constituent of concern (from a minimum of eight independent samples from the background monitoring wells) and the detected concentration values for each naturally occurring inorganic constituent of concern in the remaining monitoring wells within the shallow and regional groundwater monitoring network. The concentration limit (applicable suite of background data) for each naturally occurring inorganic constituent of concern shall be redetermined annually according a “moving window” formula, and the Discharger shall use the resulting concentration limit to complete interwell statistics. The background concentration limits will be determined by calculating prediction limits (e.g., Shewhart Upper Control Limit - the mean plus three times the standard deviation for background water quality) featured in the Stat-Most statistical software package, or an appropriate equivalent statistical method. Detection frequency, outliers, and distributional forms will

be used to decide whether normal, lognormal, or nonparametric prediction limits will be used.

The monitoring wells used to collect background monitoring data for all Units include: wells TW-1-145, TW-2E-150, TW-2N-135, TW-2S-150, and TW-5-150 for the shallow groundwater zone; and wells TW-2ED-215, TW-2ND-260, TW-3-250, and TW-4WD-290 for the regional groundwater zone. For each annual reporting period subsequent to the initial reporting period, the Discharger shall create the new concentration limit, for that constituent, by taking the prior reporting period's background data, adding the newest datum, for that constituent for the referenced background monitoring wells and removing the oldest datum.

4. Point of Compliance

The point of compliance for the water standard at each Unit is a vertical surface located at the hydraulically downgradient limit of the Unit that extends through the uppermost aquifer underlying the Unit.

5. Compliance Period

The compliance period for each Unit shall be the number of years equal to the active life of the Unit plus the closure period. The compliance period is the minimum period during which the Discharger shall conduct a water quality monitoring program subsequent to a release from the Unit. The compliance period shall begin anew each time the Discharger initiates an evaluation monitoring program.

D. MONITORING

The Discharger shall comply with the detection monitoring program provisions of Title 27 for groundwater and the unsaturated zone, in accordance with Detection Monitoring Specifications of Waste Discharge Requirements, Order No. R5-2004-0161. For a new Unit, background analytical data shall be collected for a period of one year prior to the discharge of waste in order to establish background values for each constituent of concern and monitoring parameter and to select the appropriate data analysis method [Title 27 CCR Section 20415(e)(6)]. All monitoring shall be conducted in accordance with a Sample Collection and Analysis Plan, which includes quality assurance/quality control standards, that is acceptable to the Executive Officer.

All point of compliance monitoring wells established for the detection monitoring program shall constitute the monitoring points for the groundwater Water Quality Protection Standard. All detection monitoring program groundwater monitoring wells, unsaturated zone monitoring devices, and leachate monitoring points shall be sampled and analyzed for

monitoring parameters and constituents of concern as indicated and listed in Tables I through III.

Method detection limits and practical quantitation limits shall be reported. All peaks shall be reported, including those which cannot be quantified and/or specifically identified. Metals shall be analyzed in accordance with the methods listed in Table V.

The Discharger may, with the approval of the Executive Officer, use alternative analytical test methods, including new USEPA approved methods, provided the methods have method detection limits equal to or lower than the analytical methods specified in this Monitoring and Reporting Program.

1. Groundwater

The Discharger shall operate and maintain a groundwater detection monitoring system that complies with the applicable provisions of Title 27 CCR Sections 20415 and 20420 in accordance with a Detection Monitoring Program approved by the Executive Officer. The Discharger shall collect, preserve, and transport groundwater samples in accordance with the approved Sample Collection and Analysis Plan.

The Discharger shall determine the groundwater flow rate and direction in the uppermost aquifer and in any zones of perched water and in any additional zone of saturation monitored pursuant to this Monitoring and Reporting Program, and report the results semiannually, including the times of highest and lowest elevations of the water levels in the wells.

A groundwater contour map and tabular data shall be submitted showing the elevation of groundwater with respect to the elevations of the top and bottom of the screened interval and the elevation of the pump intake. The groundwater contour map and tabular data shall be prepared quarterly and submitted annually.

Groundwater samples shall be collected from the point-of-compliance wells, background wells, and any additional wells added as part of the approved groundwater monitoring system. Samples shall be collected and analyzed for the monitoring parameters in accordance with the methods and frequency specified in Table I.

The monitoring parameters shall also be evaluated annually with regards to the cation/anion balance, and the results shall be graphically presented using a Stiff diagram, a Piper graph, or a Schueller plot. Samples for the constituents of concern specified in Table I shall be collected and analyzed in accordance with the methods listed in Table V every five years.

2. **Unsaturated Zone Monitoring**

The Discharger shall operate and maintain an unsaturated zone detection monitoring system that complies with the applicable provisions of Title 27 CCR Sections 20415 and 20420 in accordance with a detection monitoring plan approved by the Executive Officer. The Discharger shall collect, preserve, and transport samples in accordance with the quality assurance/quality control standards contained in the approved Sample Collection and Analysis Plan.

Unsaturated zone samples shall be collected from the monitoring devices and background monitoring devices of the approved unsaturated zone monitoring system. The collected samples shall be analyzed for the listed constituents in accordance with the methods and frequency specified in Table II. All monitoring parameters shall be graphed so as to show historical trends at each monitoring point. Samples for the constituents of concern specified in Table II shall be collected and analyzed in accordance with the methods listed in Table V every five years.

The pan lysimeters shall be checked monthly for liquid and monitoring shall also include the total volume of liquid removed from the system. Unsaturated zone monitoring reports shall be included with the corresponding semiannual groundwater monitoring and shall include an evaluation of potential impacts of the facility on the unsaturated zone and compliance with the Water Quality Protection Standard.

3. **Leachate Monitoring**

All Unit leachate collection and removal system sumps shall be inspected monthly for leachate generation. Upon detection of leachate in a previously dry leachate collection and removal system, leachate shall be sampled **immediately** and analyzed for the constituents listed in Table III. Leachate shall then be sampled and analyzed annually during the fourth quarter thereafter, with a retest during the following second quarter if constituents are detected that have not been previously detected. Leachate samples shall be collected and analyzed for the listed constituents in accordance with the methods and frequency specified in Table III. The constituents of concern list shall include all constituents listed in Table V. The quantity of leachate pumped from each sump shall be measured and reported monthly as Leachate Flow Rate (in gallons).

Leachate that seeps to the surface from the Unit shall be sampled and analyzed for the constituents listed in Table III upon detection. The quantity of leachate shall be *estimated* and reported as Leachate Flow Rate (in gallons/day).

4. **Facility Monitoring**

a. **Facility Inspection**

Annually, prior to the anticipated rainy season, but no later than **30 September**, the Discharger shall conduct an inspection of the facility. The inspection shall assess damage to the drainage control system, groundwater monitoring equipment (including wells, etc.), and shall include the Standard Observations contained in Section E.3.f. below. Any necessary construction, maintenance, or repairs shall be completed by **31 October**. By **15 November** of each year, the Discharger shall submit an annual report describing the results of the inspection and the repair measures implemented, including photographs of the problem and the repairs.

b. **Storm Events**

The Discharger shall inspect all precipitation, diversion, and drainage facilities for damage **within 7 days** following *major storm events*. Necessary repairs shall be completed **within 30 days** of the inspection. The Discharger shall report any damage and subsequent repairs within 45 days of completion of the repairs, including photographs of the problem and the repairs.

E. REPORTING REQUIREMENTS

1. The Discharger shall retain records of all monitoring information, including all calibration and maintenance records, all original strip chart recordings of continuous monitoring instrumentation, copies of all reports required by Order No. R5-2004-0161, and records of all data used to complete the application for Order No. R5-2004-0161. Records shall be maintained throughout the life of the facility including the postclosure period.

Such legible records shall show the following for each sample:

- a. Sample identification and the monitoring point or background monitoring point from which it was taken, along with the identity of the individual who obtained the sample;
- b. Date, time, and manner of sampling;
- c. Date and time that analyses were started and completed, and the name of the personnel and laboratory performing each analysis;
- d. Complete procedure used, including method of preserving the sample, and the identity and volumes of reagents used;
- e. Calculation of results; and

- f. Results of analyses, and the MDL and PQL for each analysis.
2. A transmittal letter explaining the essential points shall accompany each report. At a minimum, the transmittal letter shall identify any violations found since the last report was submitted, and if the violations were corrected. If no violations have occurred since the last submittal, this shall be stated in the transmittal letter. The transmittal letter shall also state that a discussion of any violations found since the last report was submitted, and a description of the actions taken or planned for correcting those violations, including any references to previously submitted time schedules, is contained in the accompanying report.
 3. Each monitoring report shall include a compliance evaluation summary. The summary shall contain at least:
 - a. For each monitoring point and background monitoring point addressed by the report, a description of:
 - 1) The time of water level measurement;
 - 2) The type of pump - or other device - used for purging and the elevation of the pump intake relative to the elevation of the screened interval;
 - 3) The method of purging (the pumping rate; the equipment and methods used to monitor field pH, temperature, and conductivity during purging; the calibration of the field equipment; results of the pH, temperature, conductivity, and turbidity testing; and the method of disposing of the purge water) to remove all portions of the water that was in the well bore while the sample was being taken;
 - 4) The type of pump - or other device - used for sampling, if different than the pump or device used for purging; and
 - 5) A statement that the sampling procedure was conducted in accordance with the approved Sampling and Analysis Plan.
 - b. A map or aerial photograph showing the locations of observation stations, monitoring points, and background monitoring points.
 - c. For each groundwater body, a description and graphical presentation of the gradient and direction of groundwater flow under/around the Unit, and the groundwater flow rate, based upon water level elevations taken prior to the collection of the water quality data submitted in the report.

- d. Laboratory statements of results of all analyses evaluating compliance with requirements.
 - e. An evaluation of the effectiveness of the leachate monitoring and control facilities, and of the run-off/run-on control facilities.
 - f. A summary and certification of completion of all **Standard Observations** for the Unit(s), for the perimeter of the Unit, and for the receiving waters. The Standard Observations shall include:
 - 1) For the Unit:
 - a) Evidence of ponded water at any point on the facility (show affected area on map);
 - b) Evidence of odors - presence or absence, characterization, source, and distance of travel from source; and
 - c) Evidence of erosion and/or of day-lighted refuse.
 - 2) Along the perimeter of the Unit:
 - a) Evidence of liquid leaving or entering the Unit, estimated size of affected area, and flow rate (show affected area on map);
 - b) Evidence of odors - presence or absence, characterization, source, and distance of travel from source; and
 - c) Evidence of erosion and/or of day-lighted refuse.
 - g. The quantity and types of wastes discharged and the locations in the Unit where waste has been placed since submittal of the last such report.
4. The Discharger shall report by telephone any seepage from the disposal area **immediately** after it is discovered. A written report shall be filed with the Regional Board **within seven days**, containing at least the following information:
- a. A map showing the location(s) of seepage;
 - b. An estimate of the flow rate;
 - c. A description of the nature of the discharge (e.g., all pertinent observations and analyses);

- d. Verification that samples have been submitted for analyses of the Constituents of Concern and Monitoring Parameters, and an estimated date that the results will be submitted to the Regional Board; and
 - e. Corrective measures underway or proposed, and corresponding time schedule.
5. The Discharger shall submit an **Annual Monitoring Summary Report** to the Regional Board covering the reporting period of the previous monitoring year. This report shall contain:
- a. All monitoring parameters and constituents of concern shall be graphed so as to show historical trends at each monitoring point and background monitoring point, for all samples taken within at least the previous five calendar years. Each such graph shall plot the concentration of one or more constituents for the period of record for a given monitoring point or background monitoring point, at a scale appropriate to show trends or variations in water quality. The graphs shall plot each datum, rather than plotting mean values. For any given constituent or parameter, the scale for background plots shall be the same as that used to plot downgradient data. Graphical analysis of monitoring data may be used to provide significant evidence of a release.
 - b. Unless otherwise exempted by the Executive Officer, all monitoring analytical data obtained during the previous two six-month reporting periods, shall be submitted in tabular form as well as in a digital file format acceptable to the Executive Officer. The Regional Board regards the submittal of data in hard copy and in digital format as "...the form necessary for..." statistical analysis [§20420(h)], in that this facilitates periodic review by the Regional Board.
 - c. A comprehensive discussion of the compliance record, and the result of any corrective actions taken or planned which may be needed to bring the Discharger into full compliance with the waste discharge requirements.
 - d. A map showing the area and elevations in which filling has been completed during the previous calendar year and a comparison to final closure design contours.
 - e. A written summary of the monitoring results, indicating any changes made or observed since the previous annual report.
 - f. An evaluation of the effectiveness of the leachate monitoring/control facilities.

The Discharger shall implement the above monitoring program on the effective date of this Program.

MONITORING AND REPORTING PROGRAM NO. R5-2004-0161
COUNTY OF MADERA
FOR CONSTRUCTION AND OPERATION
FAIRMEAD MUNICIPAL SOLID WASTE LANDFILL
MADERA COUNTY

12

Ordered by: _____
THOMAS R. PINKOS, Executive Officer

_____ 15 October 2004
_____ (Date)

VSM:vsm/rac

TABLE I
GROUNDWATER DETECTION MONITORING PROGRAM

<u>Parameter</u>	<u>Units</u>	<u>Frequency</u>
Field Parameters		
Groundwater Elevation	Ft. & hundredths, M.S.L.	Quarterly
Temperature	°C	Semiannual
Electrical Conductivity	µmhos/cm	Semiannual
pH	pH units	Semiannual
Turbidity	Turbidity units	Semiannual
Monitoring Parameters		
Total Dissolved Solids (TDS)	mg/L	Semiannual
Chloride	mg/L	Semiannual
Carbonate	mg/L	Semiannual
Bicarbonate	mg/L	Semiannual
Nitrate - Nitrogen	mg/L	Semiannual
Sulfate	mg/L	Semiannual
Calcium	mg/L	Semiannual
Magnesium	mg/L	Semiannual
Potassium	mg/L	Semiannual
Sodium	mg/L	Semiannual
Volatile Organic Compounds (USEPA Method 8260, see Table IV)	µg/L	Semiannual
Constituents of Concern (see Table V)		
Total Organic Carbon	mg/L	5 years
Inorganics (dissolved)	mg/L	5 years
Volatile Organic Compounds (USEPA Method 8260B, extended list)	µg/L	5 years
Semi-Volatile Organic Compounds (USEPA Method 8270C)	µg/L	5 years
Chlorophenoxy Herbicides (USEPA Method 8151A)	µg/L	5 years
Organophosphorus Compounds (USEPA Method 8141A)	µg/L	5 years

TABLE II
UNSATURATED ZONE DETECTION MONITORING PROGRAM

SOIL-PORE GAS

<u>Parameter</u>	<u>Units</u>	<u>Frequency</u>
Monitoring Parameters		
Volatile Organic Compounds (USEPA Method TO-14)	µg/cm ³	Semiannual
Methane	%	Semiannual

PAN LYSIMETER

<u>Parameter</u>	<u>Units</u>	<u>Frequency</u>
Field Parameters		
Electrical Conductivity	µmhos/cm	Semiannual
pH	pH units	Semiannual

Monitoring Parameters

Total Dissolved Solids (TDS)	mg/L	Semiannual
Chloride	mg/L	Semiannual
Carbonate	mg/L	Semiannual
Bicarbonate	mg/L	Semiannual
Nitrate - Nitrogen	mg/L	Semiannual
Sulfate	mg/L	Semiannual
Calcium	mg/L	Semiannual
Magnesium	mg/L	Semiannual
Potassium	mg/L	Semiannual
Sodium	mg/L	Semiannual
Volatile Organic Compounds (USEPA Method 8260B, see Table IV)	µg/L	Semiannual

Constituents of Concern (see Table V)

Total Organic Carbon	mg/L	5 years
Inorganics (dissolved)	mg/L	5 years
Volatile Organic Compounds (USEPA Method 8260B, extended list)	µg/L	5 years
Semi-Volatile Organic Compounds (USEPA Method 8270C)	µg/L	5 years

TABLE II
UNSATURATED ZONE DETECTION MONITORING PROGRAM

Continued

Chlorophenoxy Herbicides (USEPA Method 8151A)	µg/L	5 years
Organophosphorus Compounds (USEPA Method 8141A)	µg/L	5 years

TABLE III
LEACHATE DETECTION MONITORING PROGRAM

<u>Parameter</u>	<u>Units</u>	<u>Frequency</u>
Field Parameters		
Total Flow	Gallons	Monthly
Flow Rate	Gallons/Day	Monthly
Electrical Conductivity	µmhos/cm	Monthly
pH	pH units	Monthly
Monitoring Parameters		
Total Dissolved Solids (TDS)	mg/L	Semiannual
Chloride	mg/L	Semiannual
Carbonate	mg/L	Semiannual
Bicarbonate	mg/L	Semiannual
Nitrate - Nitrogen	mg/L	Semiannual
Sulfate	mg/L	Semiannual
Calcium	mg/L	Semiannual
Magnesium	mg/L	Semiannual
Potassium	mg/L	Semiannual
Sodium	mg/L	Semiannual
Volatile Organic Compounds (USEPA Method 8260B, see Table IV)	µg/L	Semiannual
Constituents of Concern (see Table V)		
Total Organic Carbon	mg/L	5 years
Inorganics (dissolved)	mg/L	5 years
Volatile Organic Compounds (USEPA Method 8260B, extended list)	µg/L	5 years
Semi-Volatile Organic Compounds (USEPA Method 8270C)	µg/L	5 years
Chlorophenoxy Herbicides (USEPA Method 8151A)	µg/L	5 years
Organophosphorus Compounds (USEPA Method 8141A)	µg/L	5 years

TABLE IV
MONITORING PARAMETERS FOR DETECTION MONITORING

Surrogates for Metallic Constituents:

pH
Total Dissolved Solids
Electrical Conductivity
Chloride
Sulfate
Nitrate nitrogen

Constituents included in VOC:

USEPA Method 8260B

Acetone
Acrylonitrile
Benzene
Bromochloromethane
Bromodichloromethane
Bromoform (Tribromomethane)
Carbon disulfide
Carbon tetrachloride
Chlorobenzene
Chloroethane (Ethyl chloride)
Chloroform (Trichloromethane)
Dibromochloromethane (Chlorodibromomethane)
1,2-Dibromo-3-chloropropane (DBCP)
1,2-Dibromoethane (Ethylene dibromide; EDB)
o-Dichlorobenzene (1,2-Dichlorobenzene)
m-Dichlorobenzene (1,3-Dichlorobenzene)
p-Dichlorobenzene (1,4-Dichlorobenzene)
trans-1,4-Dichloro-2-butene
Dichlorodifluoromethane (CFC-12)
1,1-Dichloroethane (Ethylidene chloride)
1,2-Dichloroethane (Ethylene dichloride)
1,1 -Dichloroethylene (1,1 -Dichloroethene; Vinylidene chloride)
cis- 1,2-Dichloroethylene (cis- 1,2-Dichloroethene)
trans-1,2-Dichloroethylene (trans-1,2-Dichloroethene)
1,2-Dichloropropane (Propylene dichloride)
cis- 1,3-Dichloropropene
trans- 1,3-Dichloropropene
Di-isopropylether (DIPE)
Ethanol
Ethyltertiary butyl ether
Ethylbenzene
2-Hexanone (Methyl butyl ketone)
Hexachlorobutadiene

TABLE IV

MONITORING PARAMETERS FOR DETECTION MONITORING

Continued

Hexachloroethane
Methyl bromide (Bromomethene)
Methyl chloride (Chloromethane)
Methylene bromide (Dibromomethane)
Methylene chloride (Dichloromethane)
Methyl ethyl ketone (MEK: 2-Butanone)
Methyl iodide (Iodomethane)
Methyl t-butyl ether
4-Methyl-2-pentanone (Methyl isobutylketone)
Naphthalene
Styrene
Tertiary amyl methyl ether
Tertiary butyl alcohol
1,1,1,2-Tetrachloroethane
1,1,2,2-Tetrachloroethane
Tetrachloroethylene (Tetrachloroethene; Perchloroethylene)
Toluene
1,2,4-Trichlorobenzene
1,1,1-Trichloroethane (Methylchloroform)
1,1,2-Trichloroethane
Trichloroethylene (Trichloroethene)
Trichlorofluoromethane (CFC- 11)
1,2,3-Trichloropropane
Vinyl acetate
Vinyl chloride
Xylenes

TABLE V
CONSTITUENTS OF CONCERN & APPROVED USEPA ANALYTICAL METHODS

<u>Inorganics (dissolved):</u>	<u>USEPA Method</u>
Aluminum	6010
Antimony	7041
Barium	6010
Beryllium	6010
Cadmium	7131A
Chromium	6010
Cobalt	6010
Copper	6010
Silver	6010
Tin	6010
Vanadium	6010
Zinc	6010
Iron	6010
Manganese	6010
Arsenic	7062
Lead	7421
Mercury	7470A
Nickel	7521
Selenium	7742
Thallium	7841
Cyanide	9010B
Sulfide	9030B

Volatile Organic Compounds:

USEPA Method 8260B

Acetone
Acetonitrile (Methyl cyanide)
Acrolein
Acrylonitrile
Allyl chloride (3-Chloropropene)
Benzene
Bromochloromethane (Chlorobromomethane)
Bromodichloromethane (Dibromochloromethane)
Bromoform (Tribromomethane)
Carbon disulfide
Carbon tetrachloride
Chlorobenzene
Chloroethane (Ethyl chloride)
Chloroform (Trichloromethane)
Chloroprene
Dibromochloromethane (Chlorodibromomethane)

TABLE V

CONSTITUENTS OF CONCERN & APPROVED USEPA ANALYTICAL METHODS

Continued

1,2-Dibromo-3-chloropropane (DBCP)
1,2-Dibromoethane (Ethylene dibromide; EDB)
o-Dichlorobenzene (1,2-Dichlorobenzene)
m-Dichlorobenzene (1,3-Dichlorobenzene)
p-Dichlorobenzene (1,4-Dichlorobenzene)
trans- 1,4-Dichloro-2-butene
Dichlorodifluoromethane (CFC 12)
1,1 -Dichloroethane (Ethylidene chloride)
1,2-Dichloroethane (Ethylene dichloride)
1,1 -Dichloroethylene (1, 1-Dichloroethene; Vinylidene chloride)
cis- 1,2-Dichloroethylene (cis- 1,2-Dichloroethene)
trans- 1,2-Dichloroethylene (trans- 1,2-Dichloroethene)
1,2-Dichloropropane (Propylene dichloride)
1,3-Dichloropropane (Trimethylene dichloride)
2,2-Dichloropropane (Isopropylidene chloride)
1,1 -Dichloropropene
cis- 1,3-Dichloropropene
trans- 1,3-Dichloropropene
Di-isopropylether (DIPE)
Ethanol
Ethyltertiary butyl ether
Ethylbenzene
Ethyl methacrylate
Hexachlorobutadiene
Hexachloroethane
2-Hexanone (Methyl butyl ketone)
Isobutyl alcohol
Methacrylonitrile
Methyl bromide (Bromomethane)
Methyl chloride (Chloromethane)
Methyl ethyl ketone (MEK; 2-Butanone)
Methyl iodide (Iodomethane)
Methyl t-butyl ether
Methyl methacrylate
4-Methyl-2-pentanone (Methyl isobutyl ketone)
Methylene bromide (Dibromomethane)
Methylene chloride (Dichloromethane)
Naphthalene
Propionitrile (Ethyl cyanide)
Styrene
Tertiary amyl methyl ether
Tertiary butyl alcohol
1,1,1,2-Tetrachloroethane
1,1,2,2-Tetrachloroethane

TABLE V

CONSTITUENTS OF CONCERN & APPROVED USEPA ANALYTICAL METHODS

Continued

Tetrachloroethylene (Tetrachloroethene; Perchloroethylene; PCE)
Toluene
1,2,4-Trichlorobenzene
1,1,1 -Trichloroethane, Methylchloroform
1,1,2-Trichloroethane
Trichloroethylene (Trichloroethene; TCE)
Trichlorofluoromethane (CFC- 11)
1,2,3-Trichloropropane
Vinyl acetate
Vinyl chloride (Chloroethene)
Xylene (total)

Semi-Volatile Organic Compounds:

USEPA Method 8270C - base, neutral, & acid extractables

Acenaphthene
Acenaphthylene
Acetophenone
2-Acetylaminofluorene (2-AAF)
Aldrin
4-Aminobiphenyl
Anthracene
Benzo[a]anthracene (Benzanthracene)
Benzo[b]fluoranthene
Benzo[k]fluoranthene
Benzo[g,h,i]perylene
Benzo[a]pyrene
Benzyl alcohol
Bis(2-ethylhexyl) phthalate
alpha-BHC
beta-BHC
delta-BHC
gamma-BHC (Lindane)
Bis(2-chloroethoxy)methane
Bis(2-chloroethyl) ether (Dichloroethyl ether)
Bis(2-chloro-1-methylethyl) ether (Bis(2-chloroisopropyl) ether; DCIP)
4-Bromophenyl phenyl ether
Butyl benzyl phthalate (Benzyl butyl phthalate)
Chlordane
p-Chloroaniline
Chlorobenzilate
p-Chloro-m-cresol (4-Chloro-3-methylphenol)
2-Chloronaphthalene
2-Chlorophenol

TABLE V

CONSTITUENTS OF CONCERN & APPROVED USEPA ANALYTICAL METHODS

Continued

4-Chlorophenyl phenyl ether
Chrysene
o-Cresol (2-methylphenol)
m-Cresol (3-methylphenol)
p-Cresol (4-methylphenol)
4,4'-DDD
4,4'-DDE
4,4'-DDT
Diallate
Dibenz[a,h]anthracene
Dibenzofuran
Di-n-butyl phthalate
3,3'-Dichlorobenzidine
2,4-Dichlorophenol
2,6-Dichlorophenol
Dieldrin
Diethyl phthalate
p-(Dimethylamino)azobenzene
7,12-Dimethylbenz[a]anthracene
3,3'-Dimethylbenzidine
2,4-Dimethylphenol (m-Xylenol)
Dimethyl phthalate
m-Dinitrobenzene
4,6-Dinitro-o-cresol (4,6-Dinitro-2-methylphenol)
2,4-Dinitrophenol
2,4-Dinitrotoluene
2,6-Dinitrotoluene
Di-n-octyl phthalate
Diphenylamine
Endosulfan I
Endosulfan II
Endosulfan sulfate
Endrin
Endrin aldehyde
Ethyl methanesulfonate
Famphur
Fluoranthene
Fluorene
Heptachlor
Heptachlor epoxide
Hexachlorobenzene
Hexachlorocyclopentadiene
Hexachloropropene
Indeno(1,2,3-c,d)pyrene

TABLE V

CONSTITUENTS OF CONCERN & APPROVED USEPA ANALYTICAL METHODS

Continued

Isodrin
Isophorone
Isosafrole
Kepone
Methapyrilene
Methoxychlor
3-Methylcholanthrene
Methyl methanesulfonate
2-Methylnaphthalene
1,4-Naphthoquinone
1-Naphthylamine
2-Naphthylamine
o-Nitroaniline (2-Nitroaniline)
m-Nitroaniline (3-Nitroaniline)
p-Nitroaniline (4-Nitroaniline)
Nitrobenzene
o-Nitrophenol (2-Nitrophenol)
p-Nitrophenol (4-Nitrophenol)
N-Nitrosodi-n-butylamine (Di-n-butylnitrosamine)
N-Nitrosodiethylamine (Diethylnitrosamine)
N-Nitrosodimethylamine (Dimethylnitrosamine)
N-Nitrosodiphenylamine (Diphenylnitrosamine)
N-Nitrosodipropylamine (N-Nitroso-N-dipropylamine; Di-n-propylnitrosamine)
N-Nitrosomethylethylamine (Methylethylnitrosamine)
N-Nitrosopiperidine
N-Nitrosopyrrolidine
5-Nitro-o-toluidine
Pentachlorobenzene
Pentachloronitrobenzene (PCNB)
Pentachlorophenol
Phenacetin
Phenanthrene
Phenol
p-Phenylenediamine
Polychlorinated biphenyls (PCBs; Aroclors)
Pronamide
Pyrene
Safrole
1,2,4,5-Tetrachlorobenzene
2,3,4,6-Tetrachlorophenol
o-Toluidine
Toxaphene
2,4,5-Trichlorophenol

TABLE V

CONSTITUENTS OF CONCERN & APPROVED USEPA ANALYTICAL METHODS

Continued

0,0,0-Triethyl phosphorothioate
sym-Trinitrobenzene

Chlorophenoxy Herbicides:

USEPA Method 8151A

2,4-D (2,4-Dichlorophenoxyacetic acid)
Dinoseb (DNBP; 2-sec-Butyl-4,6-dinitrophenol)
Silvex (2,4,5-Trichlorophenoxypropionic acid; 2,4,5-TP)
2,4,5-T (2,4,5-Trichlorophenoxyacetic acid)

Organophosphorus Compounds:

USEPA Method 8141A

Atrazine
Chlorpyrifos
0,0-Diethyl 0-2-pyrazinyl phosphorothioate (Thionazin)
Diazinon
Dimethoate
Disulfoton
Ethion
Methyl parathion (Parathion methyl)
Parathion
Phorate
Simazine

INFORMATION SHEET

ORDER NO. R5-2004-0161
COUNTY OF MADERA AND MADERA DISPOSAL SYSTEMS, INC.
FOR CONSTRUCTION AND OPERATION
FAIRMEAD MUNICIPAL SOLID WASTE LANDFILL
MADERA COUNTY

The County of Madera owns the Fairmead Municipal Solid Waste Landfill (landfill). The landfill is operated by Madera Disposal Systems, Inc., a California corporation, a subsidiary of Waste Connections, Inc. The County of Madera and Madera Disposal Systems, Inc., are hereafter jointly referred to as Discharger. The landfill is about one mile south of Fairmead in Madera County.

The climate in the southern San Joaquin Valley is semi-arid, with hot, dry summers and cool winters. The average annual precipitation is 10.1 inches and the mean pan evaporation is estimated to be 66.0 inches per year. The landfill is within a 100-year floodplain according to the 1987 Flood Hazard Boundary Map, published by the U.S. Department of Housing and Urban Development.

The waste management facility is constructed within unconsolidated alluvium deposited by the Chowchilla River System. The Quaternary age alluvium (Riverbank Formation) is typically vertically and horizontally anisotropic and consists of interbedded thin beds and lenses of gravel, sand, silty-sand, clayey-sand, silt, sandy-silt, clay, and sandy-clay. Beds and lenses of coarser-grained materials, channel and point bar deposits, are located about 200 to 300 feet below ground surface (bgs), and are localized and not continuous to the point of forming a single recognizable aquifer. Underlying the unconsolidated alluvium are Quaternary and Tertiary continental deposits of interbedded siltstone, sandstone, and claystone, which comprise the principal bedrock. The Quaternary and Tertiary deposits are about 400 feet bgs.

The landfill is on the floor of the southern San Joaquin Valley. Surface drainage is southwesterly toward Berenda Slough (a tributary of the Fresno River) in the Madera Hydrologic Area of the San Joaquin Basin.

The Berenda Slough and Berenda Creek, the nearest surface water bodies to the landfill are approximately 3 to 3.5 miles northwest and southeast of the landfill respectively. Landfill operations should not impact either surface water body.

The waste management facility contains one existing unlined Unit (Unit 1) covering about 45 acres and one existing lined Unit (Unit 2) covering about 26 acres. The existing Units are currently classified as Class III landfills that accept or accepted municipal solid waste in accordance with Title 27, California Code of Regulations (CCR), Section 20005, et seq.

The Discharger proposes to construct an expansion Unit (Unit 3) for the discharge of municipal solid waste to an area of about 26 acres east of Unit 2. The new Unit will consist of four separate expansion cells beginning with Cell No. 1. The Discharger proposes to install an engineered alternative liner system in the new Unit that consists of, in ascending order: 1) a six-inch thick

subgrade recompacted to at least 90% of maximum dry density and within two percent of optimum moisture content; 2) a 40-mil thick HDPE geomembrane; 3) a GCL with a 60-mil thick HDPE geomembrane backing, with the geomembrane facing up; 4) a geocomposite drainage layer (primary leachate collection and removal system) over the base liner system; and 5) a two-foot thick operations layer over the geocomposite drainage layer.

The Discharger demonstrated that the proposed engineered alternative liner system is consistent with the performance goals contained in Title 27 CCR Section 20310(c), and affords equivalent protection against water quality impairment in accordance with Title 27 CCR Section 20080(b)(2). The proposed composite liner system combined with: 1) an electronic leak detection survey that will provide 100 percent coverage of the constructed base liner system to detect construction-related defects (e.g., 1 cm² holes or greater); 2) the placement of select refuse as the first lift of waste to prevent damage to the liner system; 3) the inspection of the operations layer for possible damage to the liner system as wastes are placed upon it; and 4) the prompt repair of observed damage to the liner system, will provide for an overall containment system that meets the performance goal contained in Title 27 CCR Section 20310(c) for a Class III landfill.

There are 84 domestic and/or agricultural groundwater wells within one mile of the landfill. No surface springs or other sources of groundwater supply have been observed.

Groundwater occurs in three zones, a perched groundwater zone (104-107 bgs), a shallow groundwater zone (116-134 bgs), and a regional groundwater zone (174-189 bgs). Depending on location, the first encountered groundwater ranges from about 104 feet bgs (elevation 139 feet MSL) to about 174 feet bgs (elevation 64 feet MSL) and may be either perched, shallow, or regional groundwater. Groundwater in each of the aforementioned zones is unconfined. The depth to regional groundwater fluctuates seasonally as much as 20 feet due to heavy pumping in the summer months. Due to the fine-grained nature of the geologic materials in the shallow groundwater zone, seasonal fluctuations in that groundwater zone are considerably lower than the regional groundwater zone. Monitoring data indicates background groundwater quality has an electrical conductivity (EC) ranging between 167 and 791 micromhos/cm, with total dissolved solids (TDS) ranging between 130 and 560 mg/l. Monitoring data also indicate that perched groundwater has an EC ranging up to 1,508 micromhos/cm, and TDS ranging up to 530 mg/l.

The flow direction of perched groundwater has not been defined since there are only two monitoring wells currently screened in this groundwater zone. The perched groundwater zones appear to be very localized, one located at the northeast corner of Unit 1 and the other located along the southern boundary of the facility. The shallow groundwater zone appears to be controlled by clay lenses and is laterally discontinuous. The predominant direction of shallow groundwater flow appears to be vertically downward toward the regional groundwater zone. The direction of groundwater flow in the regional groundwater zone is generally toward the northeast and is influenced by the heavy pumping of nearby irrigation wells.

The nature of the release from Unit 1 in perched groundwater consists of the volatile organic compounds (VOCs) tetrachloroethene (PCE), dichlorodifluoromethane (CFC-12), and trichlorofluoromethane (CFC-11), and to a lesser extent, tetrachloroethene (TCE), cis-1,2-dichloroethene (cis-1,2-DCE), trans-1,2-dichloroethane (trans-1,2-DCE) and 1,1-dichloroethane (1,1-DCA). The nature of the release from Unit 1 in shallow groundwater consists of the VOCs PCE, CFC-12, and CFC-11, and to a lesser extent, chloroethane, TCE, and 1,1-DCE. The nature of the release from Unit 1 in regional groundwater consists of the VOCs CFC-12 and PCE. Statistical analysis of groundwater samples from the Fourth Quarter, 2003, determined that bicarbonate, TDS, calcium, magnesium, sodium, and potassium exceeded their respective background concentrations and in shallow groundwater and represent the inorganic waste constituent release from Unit 1.

The Regional Board adopted Cleanup and Abatement Order No. 96-161 on 21 June 1996, requiring the Discharger to: complete an Evaluation Monitoring Program and submit a report with the results of the distribution of each Constituent of Concern released; submit an Engineering Feasibility Study for corrective action, including a time schedule to establish, implement, conduct, and complete a Corrective Action Program; and implement the Corrective Action Program. The Discharger's Evaluation Monitoring Program was deemed complete by Regional Board staff on 6 November 2001. The Discharger is currently conducting a one-year test utilizing a vacuum extraction system in order to determine its effectiveness in remediating volatile organic compounds from groundwater beneath and adjacent to the Fairmead Landfill. A one-year status report of the effectiveness of the proposed vacuum extraction system is due from the Discharger by 31 December 2004.

Volatile organic compounds are often detected in a release from a landfill, and are the primary waste constituents detected in groundwater beneath a municipal solid waste landfill. Since volatile organic compounds are not naturally occurring, and thus have no background value, they are not amenable to the statistical analysis procedures contained in Title 27 CCR for the determination of a release of wastes from a Unit. Title 27 CCR does provide for the non-statistical evaluation of monitoring data that will provide the best assurance of the earliest possible detection of a release from a Unit. However, Title 27 CCR does not specify a specific method for non-statistical evaluation of monitoring data. The Board may specify a non-statistical data analysis method pursuant to Title 27 CCR Section 20080(a)(1). In order to provide the best assurance of the earliest possible detection of a release of non-naturally occurring waste constituents from a Unit, this Order specifies a non-statistical method for the evaluation of monitoring data.

The specified non-statistical method for evaluation of monitoring data in this Order provides two criteria (or triggers) for making the determination that there has been a release of waste constituents from a Unit. The presence of two waste constituents above their respective method detection limit (MDL), or one waste constituent detected above its practical quantitation limit (PQL), indicates that a release of waste from a Unit has occurred. Following an indication of a release, verification testing will be conducted to determine whether there has been a release from

the Unit, or there is a source of the detected constituents other than the landfill, or the detection was a false detection. Although the detection of one waste constituent above its MDL is sufficient to provide for the earliest possible detection of a release in accordance with Title 27 CCR, the detection of two waste constituents above the MDL as a trigger is appropriate due to the higher risk of false-positive analytical results and the corresponding increase in sampling and analytical expenses from the use of detecting one waste constituent above its MDL as a trigger.

On 9 October 1991, the United States Environmental Protection Agency (USEPA) promulgated regulations (Title 40, Code of Federal Regulations, Parts 257 and 258, "federal municipal solid waste [MSW] regulations" or "Subtitle D") that apply, in California, to dischargers who own or operate Class II or Class III landfill units at which municipal solid waste is discharged. The majority of the federal MSW regulations became effective on the "Federal Deadline", which was on 9 October 1993. With the issuance of Resolution No. 93-62, the State Water Resources Control Board established a statewide policy for the regulation of discharges of municipal solid wastes consistent with Subtitle D. Following the issuance of Resolution No. 93-62, the USEPA deemed the State of California to be an approved state, meaning that compliance with the applicable state regulations constitutes compliance with the corresponding portions of the federal Subtitle D regulations. These requirements are consistent with Resolution No. 93-62 and Subtitle D, and implement the appropriate state regulations in lieu of Subtitle D. The Discharger also needs to comply with all applicable provisions of Subtitle D that are not implemented through compliance with this Order or Title 27 CCR.

The action to revise the waste discharge requirements for existing Unit Nos. 1 and 2 at the facility is exempt from the provisions of the California Environmental Quality Act (CEQA), Public Code Section 21000, et seq., and the CEQA guidelines, in accordance with Title 14 CCR Section 15301, et seq. The final environmental impact report for expansion Unit No. 3 was approved by the Madera County Board of Supervisors on 7 February 1989. The Regional Board considered the environmental impact report and incorporated mitigation measures from the environmental impact report into these waste discharge requirements designed to prevent potentially significant impacts to design facilities and to water quality. Revision of the waste discharge requirements updates the requirements to conform with the California Water Code and Title 27 CCR Section 20005 et seq.

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